



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,577	04/18/2005	Takashi Noro	123531	1888
25944	7590	10/06/2008	EXAMINER	
OLIFF & BERRIDGE, PLC			JOLLEY, KIRSTEN	
P.O. BOX 320850				
ALEXANDRIA, VA 22320-4850			ART UNIT	PAPER NUMBER
			1792	
			MAIL DATE	DELIVERY MODE
			10/06/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,577	NORO ET AL.	
	Examiner	Art Unit	
	Kirsten C. Jolley	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 20-39 is/are pending in the application.
 - 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 20-39 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/18/05, 7/6/05, 11/29/07</u> . | 6) <input type="checkbox"/> Other: ____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US 5,749,970) in view of Gane (US 4,728,539).

Fukuta et al. discloses an apparatus for coating the outer peripheral surface of a pillar structure comprising: a holding means which holds the pillar structure in nearly vertical direction and rotates together with the held pillar structure on an axis of nearly vertical direction as a common rotating axis; a supplying and coating means which supplies a coating material to the outer peripheral surface of the rotating pillar structure and coats the coating material on the outer peripheral surface; and a doctor blade smoothing means the one longer side end portion of which is disposed at a given position with respect to the outer peripheral surface and which smoothes the coating surface of the coating material supplied to and coated on the outer peripheral surface, whereby the coating material is supplied to and coated on the outer peripheral surface through the elastic body, and the coating surface is smoothed between the outer peripheral surface and the elastic body.

Fukuta et al. lacks a teaching of a smoothing means having a smoothing plate and a sheet-like elastic body provided at the longer side end portion of the smoothing plate on the side of the pillar structure. The prior art of Gane is cited for its teaching of a coating apparatus comprising a flexible/elastic blade secured to a retaining means. Gane teaches that the flexible blade of its invention achieves improved coating such as a much smoother flow of coating composition under the blade as compared to a prior art steel doctor blade, resulting in a smooth, level coating (col. 3, lines 52 to col. 4, line 14, and col. 2, lines 7-45). It would have been obvious to one having ordinary skill in the art, having seen the improved results achieved by Gane, to have substituted a flexible/elastic doctor blade in the apparatus of Fukuta et al. with the expectation of achieving smoother flow of coating material under the blade and a resulting smooth, level coating.

With respect to claim 21, the doctor blade of Fukuta et al. is disposed so that its longer direction coincides with the central axis direction of the pillar structure, therefore the modified elastic blade would be disposed in the same position. The elastic blade would contact the outer peripheral surface of the pillar structure, as similarly illustrated in Gane, between both end faces of the pillar structure.

As to claim 22, Fukuta et al. teaches that the holding means holds the pillar structure placed thereon with one end thereof facing downward and has a pedestal rotating together with the held pillar structure on the axis of the nearly vertical direction as the common rotating axis (col. 8, lines 14-19).

As to claim 23, Fukuta et al. teaches that the holding means has a cam which is disposed on the side of another end of the pillar structure placed and held on the pedestal and rotates on

Art Unit: 1792

the axis of the vertical direction as the common rotating axis (col. 7, lines 24-36). As to claim 24, the outer peripheral shape of the pedestal and that of the cam are nearly the same. As to claim 25, a centering means holds the pillar structure and the pedestal and/or the cam in a given positional relation.

As to claim 26, Fukuta et al. discloses a following means which drives the smoothing means following the outer periphery of the pedestal and/or the cam so that the smoothing means is disposed at a given position with respect to the outer peripheral surface of the pillar structure (col. 7, lines 1-18).

As to claim 27, the following means has first and second following rollers 36, 37 which are disposed at a given distance from each other and move backward and forward following the outer periphery of the cam while contacting with the outer periphery of the cam together with the supplying and coating means and the smoothing means, and the first and second following rollers are disposed so that the angle formed by a straight line passing through the centers of the respective rollers and a tip portion of the smoothing means is a given angle (see Figure 4).

As to claim 28, Fukuta et al. lacks a teaching of using third and fourth following rollers where the rotating axis of the third following roller and that of the first following roller are common and the rotating axis of the fourth following roller and that of the second following roller are common. However, it is the Examiner's position that it would have been obvious for one having ordinary skill in the art to have added two more following rollers, in the same axis as following rollers 36, 37, to provide improved stability to the vertical pillar structure.

As to claims 29-32, it is the Examiner's position that the width, thickness, and hardness of a flexible/elastic blade in the modified process of Fukuta et al. would have been determined through routine experimentation depending upon the specific coating materials used, the speed of rotation of the pillar structure, the coating thickness desired, etc., in the absence of a showing of criticality.

As to claim 33, Gane teaches that the elastic blade may comprise rubber (col. 3, lines 18-19).

As to claim 34, Fukuta et al. teaches that the outer periphery of the pedestal and/or the cam comprise stainless steel or ceramics (col. 5, lines 34-40).

As to claim 35, Fukuta et al. discloses that its original doctor blade should be made of stainless steel or ceramics to provide durability (col. 5, lines 29-31). For this reason, it would have been obvious for the retaining means of the flexible blade in the apparatus of Fukuta et al. in view of Gane to similarly be made of stainless steel or ceramics -- to provide durability.

As to claim 36, the shape of a section of the pillar structure cut along a plane perpendicular to the central axis of the pillar structure is circular or elliptical (see Figures).

As to claim 37, Fukuta et al. teaches that its pillar structure is a honeycomb structure comprising a plurality of cells which are flow paths for fluid.

As to claim 38, Fukuta et al. lacks a disclosure of supplying and coating means and smoothing means which can rotate together along the outer periphery of the pillar structure. However it is the Examiner's position that it would have been obvious for an engineer having

ordinary skill in the art to have reversed the means for relative movement (i.e., the pillar structure is stationary while the coating and smoothing means rotate around the pillar structure) with the expectation of equivalent and similar results since relative movement between the substrate and coating and smoothing means is what is required.

As to claim 39, Fukuta et al. also discloses a method of using the apparatus discussed above with respect to claim 1 comprising: holding the pillar structure by the holding means; supplying the coating material from the supplying and coating means on the outer peripheral surface of the pillar structure and coating the coating material thereon while rotating the pillar structure and the holding means on the axis of vertical direction as a common rotating axis; and smoothing the coating surface of the supplied and coated coating material between the outer peripheral surface and the sheet-like elastic body.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Tuesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1792

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kirsten C Jolley/
Primary Examiner, Art Unit 1792

kcj